April 1937

Rural Electrification
Series, No. 1

HOW TO GET ELECTRICITY FOR YOUR FARM

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by
Albert V. Krewatch

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Cooperative Extension Work in Agriculture and Home Economics,
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T. B. SYMONS, Director

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HOW TO GET ELECTRICITY FOR YOUR FARM

by
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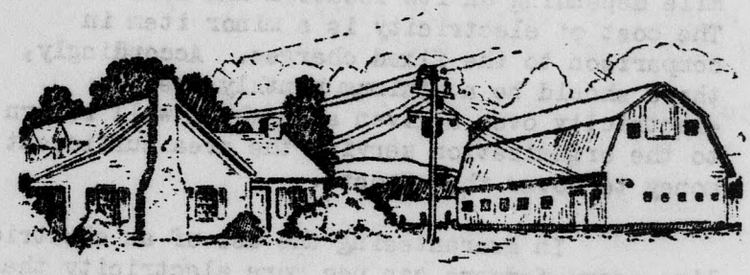
Specialist in Agricultural Engineering



Rural Electrification is progressing rapidly in Maryland. Renewed interest is evident, also a growing demand that the rural sections share in the conveniences and labor saving devices made possibly by electric energy. General downward trends in current rates and minimum charges coupled with more liberal line extension policies, reduced line construction costs, and the opportunities for financial and cooperative assistance by the Rural Electrification Administration should speed farm electrification in the future. The primary purpose of this circular is to give you a general explanation of the terms and conditions of the various ways under which rural electric service is made available and to show what steps may be taken by individuals and groups to get this service.

WHAT RURAL ELECTRIFICATION MEANS

Rural people are realizing more and more the value of electricity. Health is improved, and comfort and convenience increased by the plentiful supply of good water and the sewage disposal facilities made possible by automatic electric water systems. Adequate light for every member of the family is imperative if eyesight is to be protected. Electricity furnishes light, heat and power from one service quickly and effectively. It will cook food, heat water, cool milk, grind feed, brood chicks, run the washing machine and operate the radio and do hundreds of other farm tasks. It is being used to increase income and lessen drudgery in many ways. Once used, modern dairy, poultry, fruit and truck farms find electric power almost indispensible.

Lines built for farmers require more uses than just "lights", if they are to be self-supporting. However, when there are enough farmers who will use electricity for lights, water pumping, refrigeration or cooking and radio, "high line " electricity is usually easy to obtain and may be classed as "cheap power". In general, the electric bill is not an addition to present expenses because it replaces certain expenses for light, heat, and power that the farmer now pays. Refer to Rural Electrification Series No. 2 "The Cost of Electricity for Your Farm".

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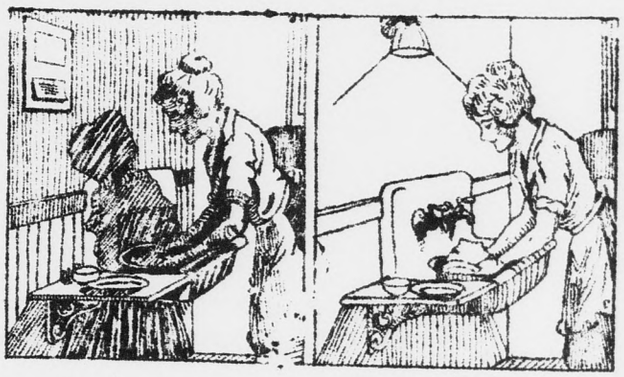

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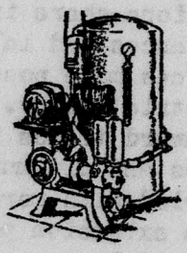
THE PRESENT GUARANTEE PLAN

The 1½% guarantee plan is the one most generally used is Maryland. Where there are three farms to the mile of line to take power, the cost of a rural line, ready to serve, is usually not much more than $1,000.00 a mile. Considering taxes, interest, depreciation, and operation, the monthly total of overhead and operating costs of the line amount to from $12.00 to $18.00 per mile depending on its location and construction. The cost of electricity is a minor item in comparison to the fixed charges. Accordingly, there should be a minimum monthly use of electricity over a given area which will return to the organization serving the area sufficient money to cover these costs.



In guaranteeing the use of an electric line, some farmers can use more electricity than the average, some will use less. For example, if the total guarantee for a section of a representative farm line with three customers is $16.00 per month, one customer might agree to use $7.50 worth of electricity, another $5.00 and the third only $3.50 a month in order to support the line. If there were four customers and they divided the guarantee equally, it would be $4.00 per month for each customer.

THE CASH DEPOSIT PLAN

The cash deposit plan is used in some portions of the State. In these areas the persons desiring electric service deposit a sum of money for a given period (in one case it is refundable over an indefinite period) of years in order to obtain electric service. The customers are then free to use as little or as much electricity as they wish. Cash plans vary. For detailed information, it is necessary to contact the utility company serving in the area.

USUAL STEPS TAKEN BY INDIVIDUALS FOR UTILITY COMPANY SERVICE

1. Individually or as a group, apply for current. Enlist the aid of your county agent.

2. Ask the utility company for a written statement of costs and approximate time of serving.

3. Adjust guarantees, deposits and otherwise complete the contracts.

4. Ask the utility company for a written notice to start wiring.

5. Make a wiring layout for your home and farm buildings. Information can be obtained from your county agent or home demonstration agent, or a reliable contractor or in some cases, your utility company.

6. Get wireman's bids on all or part of the wiring indicated in the layout.

7. Require the wiremen to furnish a Fire Underwriter's Certificate before completing payment for the work.

8. Ask the Underwriter's Inspector to check the completed job against the wiring layout.

9. Keep in touch with your county agent or the utility serving in the area for local rural electrification information.

THE GOVERNMENT FINANCING PLAN

For the purpose of assisting rural people in getting electric service where existing service has not met their needs, the Rural Electrification Administration is empowered to lend money for the "construction of new distribution lines or systems for the furnishing of electric energy".

Under suitable conditions, REA lends the entire cost of building the lines. Loans are made on favorable terms. Borrowers are given 20 years to pay back the loans and the interest rate is about 3 per cent. Security for the loans is usually the line itself and its revenues.

The area to be served by the new lines should be more or less concentrated and compact. To be economically successful, a project should have at least 50 miles of line or serve at the mimimum about 150 customers. Shorter extensions may be approved, if they are made part of an existing, self-supporting line.

The lines should be planned to bring power to every possible consumer in the area. In general, the extent to which REA can help depends upon the following questions:

1. How many miles of line will there be?

2. How many consumers will the line average per mile?

3. How much can these consumers afford to pay for current per month?

This information can be easily obtained for any unserved area. It is necessary because there are many items of expense growing out of the construction and operation of a power line. These become very burdensome unless they are shared by many consumers. In view of this fact REA cannot help bring electricity to single isolated farms or small groups of farms.

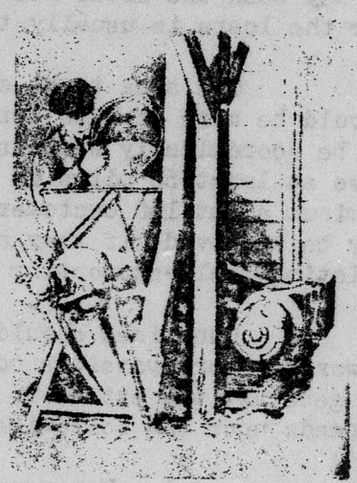
"The act requires that projects be self-liquidating, and it is therefore a basic REA requirement that a project offer reasonable assurance of financial success. The initiative and enthusiasm of rural people in signing up and in organizing substantial projects will be important factors".

THE COST OF ELECTRICITY

At the cost of from $4.15 to $7.75 a month for electricity, farmers in different parts of Maryland will receive 100 kilowatt-hours* of energy. For a small family, this amount of power will usually light the buildings, pump the water, wash and iron, operate the refrigerator and radio in the home, besides furnish power for the small appliances such as fans, toasters, sweepers and clocks. After these uses, the farmer has cheaper electricity available for cooking, water heating and the many other uses of power in the home or about the farm.

COOPERATION WILL HELP GET THE LINES BUILT

Experience has shown that the most satisfactory way of obtaining rural electrification is through community cooperation and organization. A committee of interested farmers representing an organized community can be of great assistance in contacting the REA, municipality or power company.



Rights-of-way for poles should be willingly granted by customers to expedite the building of the line. Practically all extension plans are contingent on the furnishing of rights-of-way without cost. Adequate tree trimming and clearing is most important in preventing storm damage to power lines. All interested farmers should help get as many customers as possible in order to keep minimum monthly charges low.

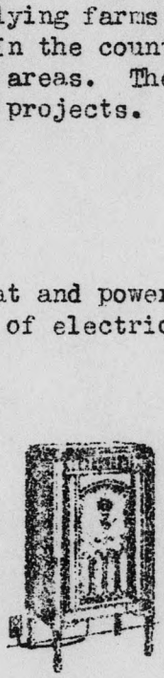
* The electric meter measures the amount of electric energy used and records it in units known as kilowatt-hours. One kilowatt equals 1,000 watts. Roughly, one kilowatt-hour is equivalent to the work done by ten men working one hour, a one horse-power motor working one hour, heating a 500 watt appliance for two hours or lighting a 100 watt lamp for ten hours.

It is always best to consider electrifying an entire rural area because the average distance between customers in a county or district may be less than the distances on a particular line. The outlying farms will be able to obtain electricity at lower minimum charges. In the county agent offices there are county maps showing served and unserved areas. These maps are available for planning short line extensions or large projects.

WHEN AND HOW TO WIRE FARM BUILDINGS

The wiring system is the heart of the light, heat and power needs on the farm. Without adequate facilities, the full value of electric service cannot be realized.

The wiring plan of each building should be carefully considered by the owner in order that costly changes and additions will not have to be made later. It is a temptation, after the wiring contractor has gone, to add here and there to his work. This often means unsafe and unsightly wiring. A good wiring plan well executed by a good contractor, supplemented by a Certificate of Inspection and Approval should insure an adequate and safe wiring system.



It is best to wait until the contract for service has been signed before going ahead with the wiring. Financial assistance may be obtained from banks, commercial organizations, agricultural credit organizations or the REA. One utility company has a financing plan covering wiring, private extensions and equipment. The REA has funds available for financing house wiring, private extensions and plumbing. No REA loans are made directly to individuals. Wiring must be done on a group basis so that advantage can be taken of the savings resulting from group purchasing.

LOCAL INFORMATION

Information concerning the use of electricity in the home or on the farm may be obtained locally from your county agent or home demonstration agent or the organization serving in your area. The county agent's office has available information on nearly all phases of rural electrification.

"The Cost of Electricity for Your Farm"
"Better Light for Maryland Farm Homes"
"How to Plan Your Electric Wiring"
"Recommended Lighting Practices"
"Uses for Electricity in the Home"
"Uses for Electricity on the Farm"
"Repair and Maintenance of Electric Equipment on the Farm for 4-H Clubs"
"Electric Equipment in the Home - Its Care and Repair"

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